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Atomic coupler with two-mode squeezed vacuum states (Conference Paper)

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Abstract

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We investigate the entanglement transfer from the two-mode squeezed state (TMS) to the atomic system by studying the dependence of the negativity on the coupling between the modes of the waveguides. This study is very important since the entanglement is an important feature which has no classical counterpart and it is the main resource of quantum information processing. We use a linear coupler which is composed of two waveguides placed close enough to allow exchanging energy between them via evanescent waves. Each waveguide includes a localized atom.

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1 Jaynes, E.T., Cummings, F.W.
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(1963) *Proceedings of the IEEE*, 51 (1), pp. 89-109. Cited 3668 times.
doi: 10.1109/PROC.1963.1664

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(2005) WMSCI 2005 - The 9th World Multi-Conference on Systemics, Cybernetics and Informatics, Proceedings

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(2010) Wuli Xuebao/Acta Physica Sinica

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2 Jensen, S.M.
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(1982) *IEEE Journal of Quantum Electronics*, 18 (10), pp. 1580-1583. Cited 806 times.
doi: 10.1109/JQE.1982.1071438

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3 Caves, C.M., Schumaker, B.L.
New formalism for two-photon quantum optics. I. Quadrature phases and squeezed states

(1985) *Physical Review A*, 31 (5), pp. 3068-3092. Cited 678 times.
doi: 10.1103/PhysRevA.31.3068

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4 Ekert, A.K.
Quantum cryptography based on Bellâs theorem

(1991) *Physical Review Letters*, 67 (6), pp. 661-663. Cited 6077 times.
doi: 10.1103/PhysRevLett.67.661

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5 Bennett, C.H., Wiesner, S.J.
Communication via one- and two-particle operators on Einstein-Podolsky- Rosen states

(1992) *Physical Review Letters*, 69 (20), pp. 2881-2884. Cited 3504 times.
doi: 10.1103/PhysRevLett.69.2881

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6 Bennett, C.H., Brassard, G., Crépeau, C., Jozsa, R., Peres, A., Wootters, W.K.
Teleporting an unknown quantum state via dual classical and Einstein-Podolsky-Rosen channels (Open Access)

(1993) *Physical Review Letters*, 70 (13), pp. 1895-1899. Cited 8576 times.
doi: 10.1103/PhysRevLett.70.1895

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7 Peres, A.
Separability criterion for density matrices

(1996) *Physical Review Letters*, 77 (8), pp. 1413-1415. Cited 3164 times.
doi: 10.1103/PhysRevLett.77.1413

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8 Hill, S., Wootters, W.K.
Entanglement of a Pair of Quantum Bits

(1997) *Physical Review Letters*, 78 (26), pp. 5022-5025. Cited 1815 times.
doi: 10.1103/PhysRevLett.78.5022

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